



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/781,038	02/18/2004	Timothy J. Porth	OCT021USPT01	8144
23403 7590 10/22/2007 SHERRILL LAW OFFICES 4756 BANNING AVE SUITE 212 WHITE BEAR LAKE, MN 55110-3205			EXAMINER CROW, STEPHEN R	
			ART UNIT 3764	PAPER NUMBER
			MAIL DATE 10/22/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/781,038

Applicant(s)

PORTH, TIMOTHY J.

Examiner

Steve R. Crow

Art Unit

3764

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 June 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-67 is/are pending in the application.
- 4a) Of the above claim(s) 5-7,9,11,13,15,18-19,21,26-29,32,34,36,38,41-42,44,49-52,55-62,64-65,67 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4,20,22-25,43,45-48,66 is/are rejected.
- 7) ☒ Claim(s) 8,10,12,14,16,17,30,31,33,35,,37,39,40,53,54 and 63 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08) 11/11/04
Paper No(s)/Mail Date 6-21-07; 2/25/05; 09/20/04
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Claims 5-7,9,11,13,15,18-19,21,26-29,32,34,36,38,41-42,44,49-52,55-62,64-65,67 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 6-25-07.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-4,20,22-25,43,45-48,66 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Rosenow.

Rosenow discloses an exercise device comprising a frame defining a transverse axis, first and second foot supports 102 operably associated with the frame for traveling along a closed loop path relative to the transverse axis wherein the closed loop path defines a stride length, a heart rate monitor, and a means for automatically adjusting the stride length of the closed loop path traveled by the foot supports based upon the heart rate sensed by the heart rate monitor.

Note the means for automatically adjusting the stride length of the closed loop path traveled by the foot supports, comprises a means for adjusting the pivot point along the length of at least one member of the connecting system, and a control unit in communication with the heart rate monitor and the stride length adjustment means for receiving a signal from the heart rate monitor indicting the user's heart and automatically adjusting the pivot point along the length of at least one member of the connecting system based upon the received signal.

Note the Rosenow discussion regarding the stride length adjustment mechanisms which begins on column 18 line 11:

Two exercise programs, a cardio program and a fat burning program, vary the resistive load of the alternator 42 as a function of the user' s heart rate.

When the cardio program is chosen, the microprocessor 504 varies the resistive load so that the user' s heart r is maintained at a value equivalent to 80% of a quantity equal to

Art Unit: 3764

220 minus the user's age. In the fat burning program, the resistive load is varied so that the user's heart rate is maintained at a value equivalent to 65% of a quantity equal to 220 minus the user's heart age. Consequently, when either of these programs is chosen, the alpha-numeric display panel 524 prompts the user to enter his age as one of the program parameters. Alternatively, the user can enter a desired heart rate. In addition, the exercise apparatus 10 includes a heart rate sensing device that measures the user's heart rate as he exercises. The heart rate sensing device consists of heart rate sensors 548 and 548' that can be mounted either on the moving arms 110 or a the fixed handrail. In the preferred embodiment, the sensors 548 and 548' are mounted on the moving arms 110. A set of output signal on a set of lines 550 and 550' corresponding to the user's heart rate is transmitted from the sensors 548 and 548' to a heart rate digital signal processing board 552. The processing board 552 then transmits a heart rate signal over a line 554 to the microprocessor 504. A detailed description of the sensors 548 and 548' and the heart rate digital signal processing board 552 can be found in U.S. Pat. Nos. 5,135,447 and 5,243,993, the entire disclosures of which are hereby incorporated by reference..... Consequently, the exercise apparatus 10 can measure the user's heart rate through the telemetry receiver 556 if the user is not grasping the arm 110. Once the heart rate signal 554 or 558 is transmitted to the microprocessor 504, the resistive load of the alternator 508 is varied to maintain the user's heart rate at the calculated values.

"The ability to adjust the stride length in an elliptical step exercise apparatus is desirable for a number of reasons. First, people, especially people with different physical

characteristics such as height, tend to have different stride lengths when walking or running. Secondly, the length of an individuals stride generally increases as the individual increases his walking or running speed. As suggested in U.S. Pat. Nos. 5,743,834 and 6,027,431, there are a number of mechanisms for changing the geometry of an elliptical step mechanism in order to vary the path the foot follows in this type of apparatus.

With reference to FIGS. 21-25, as well as the control system shown in FIGS. 15-16, a mechanism is described whereby stride length can be automatically modified in the type of machine 10 shown in FIGS. 1-4 to take into account the characteristics of the user or the exercise being performed.

As illustrated in FIG. 21, a pedal actuation assembly 700 is provided to modify stride length. Elements of the pedal actuation assembly 700 in FIG. 21 that correspond to the pedal actuation assembly 34 in FIGS. 1-4 have like reference numerals. In this case, an extension arm 60', which corresponds in function to the extension arm 60 in the assembly 34, extends directly from a crank 64'. Because the extension arm 60' extends to and beyond the pivot axle 40, it is possible to move a pivotal connection point 702 of the stroke link 58 along the extension arm 60', by a mechanism or actuator depicted at 704 in a slot 706, and along the crank 64' to the pivot axle 40. When the connection point 702 is aligned with the pivot axle 40 the pedal lever 56 will not move in a longitudinal direction thus resulting in a purely vertical movement of the foot pedal 32. If the pivot point 702 is moved past the axle 40 the foot pedal 32 move in a longitudinal direction opposite of the arm handles 110 shown in FIGS. 6A-H. As a result, the pedal

actuation assembly 700 provides added flexibility to an elliptical step apparatus. An alternate method of providing a stride adjustment capability in the pedal actuation assembly 700 is to fit an actuator 706 to the stroke link 58.

FIG. 22 illustrates another elliptical step apparatus 10" having a modified pedal actuation assembly 700'. Included in the pedal actuation assembly 700' is a first link 710 pivotally connected to the pedal lever 56 at a pivot point 702' and to a crank 64" at a pivot point 712. A second link 714 is pivotally connected at one end to the frame 12 at a pivot 714 and at its other end to the first link 710 at a pivot point 718. A detailed description of the operation of this type of actuation assembly 700' is provided in U.S. Pat. No. 5,895,339. Stride adjustment is provided by a mechanism such as an actuator 720 fitted on the first link 710. By adjusting the mechanism 720 to increase the length of the first link 710, the length of the horizontal movement of the pedals 32 can be increased." " In these embodiments of the invention, stride length can be varied automatically as a function of exercise or apparatus parameters. Specifically, the control system 500 and the console 502 of FIGS. 15 and 16 can be used to control stride length in the elliptical step exercise apparatus 10 either manually or as a function of a user or operating parameter. In FIG. 15 the pedal actuation assembly generally represented within the dashed lines 34 can be implemented by a number of mechanisms that provide for stride adjustment such as the assemblies 700, 700', 722, 736 and 740. As shown in FIG. 15, a line 748 connects the microprocessor 504 to the electronically controlled actuator elements 704, 708, 720, 734 or 744. Stride length can then be varied by the user via a manual stride length key 750 which is connected to the

Art Unit: 3764

microprocessor 504 via the data input center 516. Alternatively, the user can have stride length automatically varied by using a stride length auto key that is also connected to the microprocessor 504 via the data input center 516. In the preferred embodiment, the microprocessor is programmed to respond to the speed signal on line 514 to increase the stride length as the speed of the pedals 32 increases. Pedal direction, as indicated by the speed signal can also be used to vary stride length. For example, if the microprocessor 504 determines that the user is stepping backward on the pedals 32, the stride length can be reduced since an individual's stride is usually shorter when stepping backward. Additionally, the microprocessor 504 can be programmed to vary stride length a function of other parameters such as resistive force generated by the alternator 42; heart rate measured by the sensors 548 and 548'; and user data such as weight and height entered into the console 502."

Note the connecting system having first and second foot links each having a first end and supporting one of the foot supports, first and second connector links each having a first end and a second end, with each connector link pivotally attached proximate the first end to one of the foot links proximate the first end of the foot link at a foot link pivot point 40, first and second rocker arms each having a first end and a second end, with each rocker arm pivotally attached proximate the first end to the frame and pivotally attached proximate the second end to one of the connector links proximate the second end of the connector link at a rocker pivot point, a drive shaft rotatably attached to the frame, and first and second crank arms having first and second ends, with each crank arm attached proximate the first end to the drive shaft and pivotally

attached proximate the second end to the connector link at a crank pivot point which is positioned intermediate the foot support pivot point and the rocker pivot point.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 18,41, and 64 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

These nonelected claims recite "the guide rail" which lacks antecedent basis. Additionally, claim 64 line 1 should recite "longitudinally".

Allowable Subject Matter


6. Claims 8,10,12,14,16,17,30,31,33,35,37,39,40,53,54, and 63 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steve R. Crow whose telephone number is 571-272-4973. The examiner can normally be reached on Reg:8:30-6;Off First Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kevin Sirmons can be reached on 571-272-4965. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SC


Stephen R. Crow
Primary Examiner